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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/647,005	09/26/2000	David Darras	Q60875	3841

7590

07/05/2002

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EXAMINER

MIGGINS, MICHAEL C

ART UNIT	PAPER NUMBER
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1772

DATE MAILED: 07/05/2002

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/647,005

Applicant(s)

DARRAS ET AL.

Examiner

Michael C. Miggins

Art Unit

1772

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 9-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-24 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☒ Interview Summary (PTO-413) Paper No(s) 5.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Art Unit: 1772

DETAILED ACTION

Election/Restrictions

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-8, drawn to a container.

Group II, claim(s) 9-15, drawn to a method using a plasma.

Group III, claim(s) 16-24, drawn to an apparatus which uses a plasma.

The inventions listed as Groups I, II and III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: Claim I is rendered obvious by Nagashima (EP 0 773 166 A1). Moreover, all groups are directed to articles, methods for making articles and an apparatus depositing a barrier material on said article useful in the general area of packaging, but each group has different special technical features. Group I has a special technical feature of a container being either a bottle or flask containing a barrier material of amorphous carbon. Group II has the special technical feature of employing a plasma to prepare said barrier material. Group III has the special technical feature of employing an gas injection means and electromagnetic radiation to deposit said barrier material on said article. Neither the method or apparatus is required to produce the article of claim 1. Accordingly, since the recited article does not make a contribution over the prior art, unity of invention is lacking.

2. During a telephone conversation with Robert Seas on 6/28/02 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-8.

Affirmation of this election must be made by applicant in replying to this Office action.

Claims 9-24 are withdrawn from further consideration by the examiner, 37

CFR 1.142(b), as being drawn to a non-elected invention.

Art Unit: 1772

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 2-3 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 2 is not enabled because applicant is claiming a nano-composite based on amorphous carbon rather than positively claiming the nano-composite. Moreover, there is nothing in the specification which provides one of ordinary skill in the art with enabling disclosure as to how one prepares a nano-composite based on amorphous carbon, i.e. there are no specific examples of what a nano-composite based on amorphous carbon. Therefore, one of ordinary skill in the art would not be able to prepare a nano-composite based on amorphous carbon. For these reasons, claim 2 is not enabled.

Art Unit: 1772

Claim 3 is not enabled because applicant is claiming a nano-composite based on amorphous carbon incorporating metal atoms rather than positively claiming what the nano-composite incorporating metal atoms is. Moreover, there is nothing in the specification which provides one of ordinary skill in the art with enabling disclosure as to how one prepares a nano-composite based on amorphous carbon incorporating metal atoms, i.e. there are no specific examples of what a nano-composite based on amorphous carbon is. Therefore, one of ordinary skill in the art would not be able to prepare a nano-composite based on amorphous carbon incorporating metal atoms. For these reasons, claim 3 is not enabled.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 2-3 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 is indefinite because applicant is claiming a nano-composite based on amorphous carbon rather than positively claiming the nano-composite. Moreover, there is nothing in the specification which provides one of ordinary skill in the art with the scope of what applicant is claiming, i.e. there are no specific examples of a nano-composite based on amorphous carbon and there is no guidance in the specification as to the scope of a nano-composite based on amorphous carbon. Therefore it is unclear

Art Unit: 1772

to one of ordinary skill in the art what is included or excluded by a nano-composite based on amorphous carbon.

Claim 3 is indefinite because applicant is claiming a nano-composite based on amorphous carbon incorporating metal atoms rather than positively claiming the nano-composite incorporating metal atoms. Moreover, there is nothing in the specification which provides one of ordinary skill in the art with the scope of what applicant is claiming, i.e. there are no specific examples of a nano-composite based on amorphous carbon incorporating metal atoms and there is no guidance in the specification as to the scope of a nano-composite based on amorphous carbon incorporating metal atoms. Therefore it is unclear to one of ordinary skill in the art what is included or excluded by a nano-composite based on amorphous carbon incorporating metal atoms.

Claim 6 is indefinite for reciting the limitation, "...in particular PET or PEN...". Is applicant claiming PET or PEN or not? It is not clear to one having ordinary skill in the art what is included or excluded by the claim and therefore, said claim is indefinite.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1772

8. Claims 1 and 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagashima (EP 0 773 166 A1) in view of Danzer et al. (*Thin Solid Films*, vol. 219, pages 119-128).

Nagashima teaches a container (20 from Fig. 1) such as a bottle or flask, made from a material with a barrier effect and a polymer material (column 3, lines 35-53), wherein the material with a barrier effect is an amorphous carbon material which is applied as a coating on a substrate of polymer material (column 3, lines 35-53), the barrier coating material which is less than about 3000 anstroms, or between 50 and 1500 angstroms, thick (column 3, lines 54-59), wherein the polymer material is a polyolefin or a polyester, in particular PET or PEN (column 4, lines 4-15), wherein the barrier coating is applied to the substrate inside the container (column 4, lines 20-31) (applies to instant claims 1 and 4-8).

Claim 1 contains the method limitation, "...made heterogeneously..." which is a method limitation in a product claim and has been given little too no patentable weight. It has been found that even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Although Nagashima does not teach that the barrier material is coated on the outside of the container, one of ordinary skill in the art would have been motivated to

Art Unit: 1772

prepare a container wherein the barrier material is coated on the outside of the container in order to increase the volume on the inside of the container thus forming a container which can hold more material (applies to instant claim 8).

Nagashima discloses applicant's invention substantially as claimed. However, Nagashima fails to disclose that the barrier material is amorphous carbon with a polymer tendency.

Danzer et al. teach the use of barrier coatings of amorphous carbon with a polymer tendency (see Introduction, page 119) for the purpose of providing improved film properties (see abstract).

Therefore it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to have provided a barrier coating of amorphous carbon with a polymer tendency in the container of Nagashima in order to provide improved film properties as taught by Danzer et al..

9. Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagashima (EP 0 773 166 A1) in view of Danzer et al. (*Thin Solid Films*, vol. 219, pages 119-128), as applied to claims 1 and 4-8 above, and further in view of Benmalek et al. (FR 2712310 A1).

Nagashima disclose applicant's invention substantially as claimed. However, Nagashima fails to disclose a barrier coating of a nano-composite based on amorphous carbon incorporating metal atoms.

Art Unit: 1772

Benmalek et al. teach a barrier coating of a nano-composite based on amorphous carbon incorporating metal atoms (see English abstract provided herein) for the purpose of providing improved transparency.

Therefore it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to have provided a barrier coating of a nano-composite based on amorphous carbon incorporating metal atoms in the container of Nagashima in order to provide improved transparency as taught by Danzer et al..


Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Benmalek et al. (WO 01/47783 A2) is cited as relevant prior art for teaching a plastic bottle coated with amorphous carbon.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Miggins whose telephone number is (703) 305-0915. The examiner can normally be reached on Monday-Friday; 1:30-10:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pyon Harold can be reached on (703) 308-4251. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



HAROLD PYON
SUPERVISORY PATENT EXAMINER
1772

2/1/02

Application/Control Number: 09/647,005

Page 9

Art Unit: 1772

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July 1, 2002